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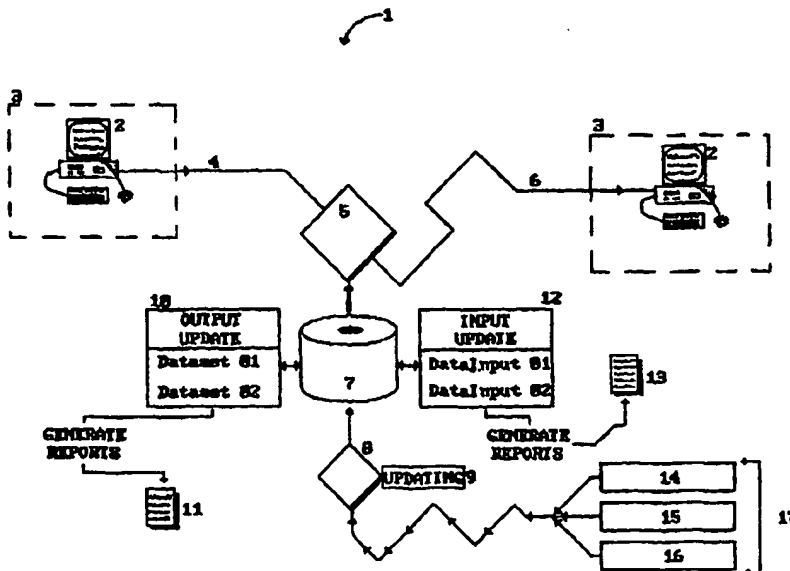
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(57) Abstract

This present invention relates to a search engine as well as a method of, and system for the searching for a selected product or product group and for generating response data for purposes of serving the request. More specifically it relates to a search engine generally operatable by means of a web based browser which provides for communication means to a hosted searching service on a computer network of a service provider connected or connectable to Information Network. Also the invention allows users to locate and obtain information on one or more products registered on one or more databases on an Information Networks such as Internet.

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INFORMATION NETWORK SEARCH ENGINE

TECHNICAL FIELD

This invention relates to a search engine as well as a method of, and system for the searching for a selected product or product group and for generating response data for purposes of serving the request. More specifically it relates to a search engine generally
5 operatable by means of a web based browser which provides for communication means to a hosted searching service on a computer network of a service provider connected or connectable to a Information Network. Furthermore the invention allows users to locate and obtain information on one or more products registered on one or more databases on an Information Networks such as the Internet.

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BACKGROUND ART

With the introduction of access to the Internet by the public and the subsequent rapid development and growth into Internet Commerce many people has required companies to develop search engines to allocate and generate reports for the searching of specific
15 information or data required. Subsequently the growth of web sites has rendered standard search engines ineffective due to the large amount of references obtained which in most cases does not have any relation with the users request. Also E-commerce and the utilization of the WWW for commercial research has created the need for a specific search

engine for locating and finding products required by a user

OBJECTIVES OF THE INVENTION

Accordingly it is an object of the present invention to provide a search engine and a
5 method and system for searching for products on the World Wide Web with regard to
certain predefined constraints and to generate and communicate intelligent response data
to the user with said data associated with a product required by the user. The method and
system allows users to search intelligently through one or more databases and to obtain
information and data in which the applicant believes that disadvantages of other search
10 engines may at least be alleviated

Furthermore it is an object of the present invention to provide a method of and system
for searching an information network for a specific product case sensitively in relation to
the product identity or category, location and price , and which the applicant believes
15 disadvantages of known search engines may at least be alleviated. In particular the
invention provides significant benefits as follows:

- Users that search information networks such as the Internet for products need not
use general or global search engines to identify and locate a specific product ; but
20 can now do a case sensitive search on the identity , location and price of the

product to obtain reference information for further use. The search engine is configured to file each product identity with its class or subclass; thereby allowing users to make easy selection and identification of a required product. Furthermore response data generated will be more accurate and provide reference detail about the product, including one or more of the following; contact information, hypertext links naming but a few;

- Vendors and product advertises benefit in that they are assured that information about their products are more accessible and that search results will be more accurate; thereby benefiting their business. Furthermore reference detail allows users to be directed to them either via the network or via contact information and/or address reference associated with the users required products.
- Service providers benefit in that the search engines allows more customers (Vendors and Advertisers) to use their services i.e. database management and web hosting because contacts or sales leads will be more accurate and reliable.

DISCLOSURE OF INVENTION

According to the 1st aspect of the invention there is included a method of searching for a product electronically including the steps of:

- 5 – providing an electronic network including at least one data terminal at a user base, at least one computer network of a service provider and at least one database including details of available products.
- on the system generating a first data input request relating to the identity of a product requested, generating a second data input request relating to the
10 location of a product requested and generating a third data input request relating to the price of a product requested;
- processing the first, second and third data input request on a computer network of a service provider and comparing the product request data-sets in relation to available products registered in at least one database;
- 15 – generating at least one response data or message including the results of the search with detail of the products associated database; and
- communicating the response data or message to the user in response to the request.

20 According to the 2nd aspect of the invention, the electronic network may include a browser

based software application with encryption and/or decryption capabilities and communication means to compile user request information and forward them to a computer network of a service provider.

- 5 According to the 3rd aspect of the invention, the search engine may include means to display and communicate information interactively with the requested information.

According to the 4th aspect of the invention the user may include any one or more of: a person, organisation, company, non-profit organisation or the like

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According to the 5th aspect of the invention the user may input the product request information via a network device or remote terminal such as a PC and a web browser used for displaying and communicating interactively with the computer network.

- 15 According to the 6th aspect of the invention the remote base may include a home or an office preferable located remotely from the database and/or the service provider.

According to the 7th aspect of the invention the Information Network may include any one or more of: the Internet, an Extranet, an Intranet, a Virtual Private Network and a

- 20 computer network of a vendor, service provider or a government network.

According to the 8th aspect of the invention the Service provider may include any one or more of: an Internet associated company or firm, a database management network or service, an organisation or a vendor.

5 According to the 9th aspect of the invention the database may include one or more data containing or storing systems and/or software and/or hardware allowing product and/or product reference details to be accessible via the Information and/or service provider network.

10 According to the 10th aspect of the invention the identity of a product may include one or more of: the product name, product type, product category and the product nature.

According to the 11th aspect of the invention the location of a product may include one or more of: the physical location, the storage location, the commercial or business location,

15 the reference data location and a hypertext link

According to the 12th aspect of the invention the price of a product may include one or more of: the actual price, the retail price, the estimated price or a price range defined as one or more values between an upper and a lower price limit

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According to the 13th aspect of the invention the response data may include details of one or more products registered in the database and/or the availability thereof.

According to the 14th aspect of the invention there is provided a search engine for
5 generating response data with regard to a product required by a user, the search engine including a method for generating and processing a user request from a remote base, said user request relating to a product on an information network and said information network including a computer network of a service provider with at least one database with available products, the method including the steps of:

- 10 – generating a first data input request relating to the identity of a product requested;
- generating a second data input request relating to the location of a product requested;
- generating a third data input request relating to the price of a product
15 requested;
- processing the first, second and third data input request on a computer network of a service provider and comparing the product request data-sets in relation to available products registered in at least one database;
- generating at least one response data or message including the results of
20 the search with detail of the products associated database; and

- communicating the response data or message to the user in response to the request.

According to the 15th aspect of the invention, the search engine may include a browser based software application with encryption and/or decryption capabilities and communication means to compile user request information and forward them to a computer network of a service provider.

According to the 16th aspect of the invention there is included a system for searching for a product electronically the system comprising:

- an electronic network including at least one data terminal at a user base, at least one computer network of a service provider and at least one database including details of available products.
- means for generating on the system a first data input request relating to the identity of a product requested, generating a second data input request relating to the location of a product requested and generating a third data input request relating to the price of a product requested;
- processing means for processing the first, second and third data input request on a computer network of a service provider and comparing the product request data-sets in relation to available products registered in at

least one database;

- means for generating at least one response data or message including the results of the search with detail of the products associated database; and
 - system software for communicating request and response data or message
- 5 to and from the user in response to the request or response message.

According to the 17th aspect of the invention there is provided a search engine for generating response data with regard to a product required by a user, the search engine including a system for generating and processing a user request from a remote base, said

10 user request relating to a product on an information network and said information network including a computer network of a service provider with at least one database with available products, the system comprising:

- a computer network with at least one database and a user data terminal;
 - means for generating a first data input request relating to the identity of a
- 15 product requested;
- means for generating a second data input request relating to the location of a product requested;
 - means for generating a third data input request relating to the price of a product requested;
- 20 - means for processing the first, second and third data input request on a

- computer network of a service provider and comparing the product request data-sets in relation to available products registered in at least one database;
- means for generating at least one response data or message including the results of the search with detail of the products associated database; and
 - 5 - system software for communicating request and response data or message to and from the user in response to the request or response message.

According to the 18th aspect of the invention there is included a method of programming a computer it means steps of:

- 10 - providing a programmable computer;
- storing a predetermined computer program on the storage capability of the computer , the program being capable of causing a body of data to be inspected for data comprises a set of pre-selected variables;
- causing a pre-selection set of variables to be entered into the computer
- 15 and received y the computer program;
- causing the pre-selected variables to be processed by the pre-programmed computer relative to the database for matching variable; and
- causing the computer to display matched variables in identified in the database

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According to the 19th aspect of the invention the computer may be interconnected to at least one other computer comprising at least one database to be inspected, the combination being such that the pre-selected variable can be entered at the first computer, the program processing such information and accessing the database at the other or second computer
5, and the matched data returned to the first computer, for display purposes

The first computer may be interconnected to a network of computers.

According to the 20th aspect of the invention the variables may comprises a first variable
10 relating to an identity of a predetermined product; a second variable relating to a location of a predetermined product and a third variable relating to a monetary value of such predetermined product.

Of coarse the computer program may include encryption and decryption capabilities
15 adapted to process information transmitted to a network encrypted form and to decrypt such information for display purposes.

Also the computer program may comprising the capability to interactively manage information process thereby thought the functioning of the computer associated therewith.

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BRIEF DESCRIPTION OF DRAWINGS

Preferred embodiments of the invention will now be described by means of non-limiting examples only, with reference to the accompanying diagrams wherein:

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Figure 1: is a block diagram of a first embodiment of the invention including a method of and system for generating a request relating to a product on an information network;

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Figure 2: is a block diagram which more extensively illustrates the system and method of the invention in particular the search request and response process;

Figure 3: is a schematic illustration of a computer network configuration for receiving and processing a user request relating or associated with a product;

Figure 4: is an example of a network configuration according to the invention;

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Figure 5: more specifically illustrates the method and system for processing and executing a product request on an Information network;

Figure 6: more extensively shows the contents or data/information subsets of one or more databases connected to the information network

Figure 7: more specifically relates to the process of comparing and associating data input request with available products;

20 Figure 8: is a diagrammatic illustration of multiple product identification or

categories; and

Figure 9 shows an example of independent databases and/or individual search engines where products are not synchronized with search results

5 BEST MODES FOR CARRYING OUT THE INVENTION

Turning to Figure 1, there is shown illustrated according to an embodiment of the invention, a method of and system for (1) generating a request relating to a product on an information network, including providing a network access device or communication
10 terminal (2) i.e. a Personal Computer at a remote base (3) i.e. a home or an office that is connected or connectable to an information network (4') i.e. for communication via the Internet. The user selections regarding the product is processed (5) on a computer network of a service provider with access to at least one database (7) connected to the network. Furthermore the invention allows updating of the products or product details or product
15 reference information (9) via a communication and updating process (8). Updating may occur from any one or more of: a vendor (14) a service provider (15) and a advertiser or marketing system (16). Furthermore the updating may be executed by the updating parties from a location associated or remote from the database (17). Also included within the scope of the invention, the database and associated computer network of the service
20 provider may be able to generate and summarize output updates (10) including generating

reports (11) on the amount of request received and the frequency of the use as to for example determine the demand for a certain product or product category. This in turn may be used for marketing information relayed to vendors, service providers and advertisers naming but a few. Furthermore Input Updates (12) may be generated and monitored
5 including generating reports (13) on demand for new advertising, product updates and retail market tendencies which may be used to price and market the facility and responses (6) sent or transmitted to the user at the remote base (3), said response including details of reference information regarding the product.

10 Figure 2 more extensively illustrates the system and method of the invention in particular the search request and response process originating when a user (18) uses a data terminal or PC (19) to access and communicate request data over an information network (20). The request (21) that is transmitted to a computer network of a service provider includes details (22) of any one or more of: the product identity or category, the product location and the
15 product price. The request is compared to a multiple product entries (25) or data stored on a database (24), including different product identification data (26), product location data (27) and prices or price ranges (28). Various data fields are compared to match user request criteria (29) in respect of the available products on one or more databases. The available data or information relating to a product including product reference data may
20 be compiled and used to generate response data or reference (30) that may be

communicated or transmitted (31) to the user (18)

Figure 3 is a schematic illustration of a computer network configuration for receiving and processing a user request relating or associated with a product at a remote user base i.e. a home or an office from a network device (34) (*i.e. a PC*) on a computer network of a service provider (35) via a Point of Presence (*POP*) (36) which in turn is connected or linked (37) with the Internet (38) directly or via Intranet (39) or Extranet (40) connection. Connected to the Internet may be a computer network of a service provider (41) that has one or more databases connected to it (42). Alternatively the database (43, 44, 45, and 49) may be connected or linked directly to the Internet; said databases containing information or data relating to or associated with a product required by a user in terms of: Product ID (46), Product Location (47) and Product price range (48). In another embodiment the database (50) may be held by a database Administrator (51) which may specialize or focus on hosting information for purposes of the search engine.

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Figure 4 is an extended example of a network configuration where users (53, 56 and 58)) may gain or obtain access to an information network via one or more of the following ways: via Dial-up network (54), via Intranet Network (55) or via Extranet Network (57) that may have direct link or communication (60) into an international (63) WWW connection or link/connection (61) to a local WWW connection (62). One or more

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service providers (64) may link directly into the international communication network with at least one database (65). Alternatively the service provider (66) may link into the local or regional network with the database (67). In yet another embodiment the service provider(s) (69, 72 and 75) and corresponding database (70, 73 and 76) may link to the
5 network via a supporting or sub-network (68, 71 and 74). Furthermore other networks may also have link or communication with the main network (62 and 63)

Figure 5 more specifically illustrates the method and system (78) for processing and executing a product request from a user (79) on an Information network (80) for
10 generating a request (81) on the network from where it is processed (82) or communicated to a Database Search Engine (83) or directly to evaluate and associate one or more of the following: the Product Identity (84), the Product Location (86) and the Product price or price range (88), with their corresponding categories and price ranges respectively (85, 87 and (89). Search results may be completed and communicated to the networks (90) for
15 generating a response to the user request.. Alternatively the database search engine (83) may via a network link (92) be able to integrate (93) or associate (94) with the request and results communicated (91) to the user.

Figure 6 more extensively shows the contents or data/information subsets of one or more
20 databases (95) connected to the information network and/or to the computer network of

a service provider (*host*). The first data set may relate to the Product Type or Category (96) which may include an alphabetical list of pre-stored product identities. A second data set may relate or be associated with a product location (97) which may be a pre-arranged list that may operate from a top-down approach starting with the macro environment i.e. country, state or province. The third data set may relate or be associated with a product price or product price range (98) which is indicated by a selection including a minimum and maximum value. Also the price may be associated with a currency value determined by the country where the product may be located.

For illustrative purposes the product request identity may be associated with aviation, the location Aberdeen (99) and the currency SA Rand (100) specified to a value i.e. R 50-R100. Should a user request (101) relate to cigars (102) in location Johannesburg (103) to the value or price (104) of between R 100 and R 200, the response data (105) may include a summary of the selections and/or reference to the product i.e. a telephone or fax number and/or an address where they or it can be found. Should a user request the exact same product and location but with another price range (110) a different response signal (111) may be generated with different reference information, except if the product on offer is at the same location or place at a different rate i.e. different brands may have different prices. Another user request (106) may relate to computers (107) in Randburg (108) with a value or price range from R 5000 to R 10000 (109) with a response signal or message (112) with reference information i.e. an address, telephone number etc.

Figure 7 more specifically relates to the process of comparing and associating data input request with available products (113). The method and system more extensively comprising of a request (122) a comparing associating engine (123) and a dataset of available products (124). User request or enquiries (114) are processed and evaluated in
5 terms of product identity (115), product location (116) an product pricing or price range (117). The completed request may be compered and/or processed (118) in terms of available products (119), active locations (120) and available prices (121). The qualified selections with corresponding reference information (125) may be processed, compiled and generated to a response signal or message (127) that is communicated (128) to the user
10 (129).

Figure 8 is a diagrammatic illustration of multiple product identification or categories (130) where product request dataset options (131) may be classified as user product request databases (132) relating to identity, location and price each with its own reference
15 or commercial identification database or dataset (133) and or information network identification (134) (www address). Furthermore the databases may hold multiple product classes with multiple items (135) i.e. wine or multiple classification (136 and 137) which are both vehicles. Furthermore multiple database entries (138) may bear resemblance in both identity (143) and cost (144) but different locations and Internet addresses (139).
20 Alternatively the product identity and location may be same for a single request (140) but

differ in price (145); but therefor different reference information (146). Also a product may be alone in its class or identity without corresponding references i.e. a specific address but rather the store or franchise identity (141)

- 5 Figure 9 shows an example of independent databases and/or individual search engines where products are not synchronized with search results. The method and/or system (147) includes users (148) at home base to input and execute a search request (149) for a certain product. The request is processed (150) and activates one or more independent searches relating to one or more of: the product identity (151), the product location (152) and the
- 10 product price/range (153) which launches multiple database searches (154), (155) and (156) respectively. Each set of search results may be communicated and transmitted (157), (158) and (159) to generate independent search results (160) which may be compiled and communicated (161) to a user (162).

CLAIMS

1. A method of searching for a product electronically including the steps of:
 - 5 – providing an electronic network including at least one data terminal at a user base, at least one computer network of a service provider and at least one database including details of available products.
 - on the system generating a first data input request relating to the identity of a product requested, generating a second data input request relating to the
10 location of a product requested and generating a third data input request relating to the price of a product requested;
 - processing the first, second and third data input request on a computer network of a service provider and comparing the product request data-sets in relation to available products registered in at least one database;
 - 15 – generating at least one response data or message including the results of the search with detail of the products associated database; and
 - communicating the response data or message to the user in response to the request.
- 20 2. A method as claimed in claim 1 wherein the electronic network includes a browser

based software application with encryption and/or decryption capabilities and communication means to compile user request information and forward them to a computer network of a service provider.

- 5 3. A method as claimed in claim 1 wherein the browser based software application is a search engine including means to display and communicate information interactively with the requested information.
4. A method as claimed in claim 1 wherein the user includes any one or more of: a
10 person, organisation, company, non-profit organisation or the like
5. A method as claimed in claim 1 wherein the user inputs the product request information via a network device or remote terminal such as a PC and a web browser used for displaying and communicating interactively with the computer
15 network.
6. A method as claimed in claim 1 wherein the remote base includes a home or an office preferable located remotely from the database or the service provider
- 20 7. A method as claimed in claim 1 wherein the Information Network includes any

one or more of: the Internet, an Extranet, an Intranet, a Virtual Private Network and a computer network of a vendor, service provider or a government network.

8. A method as claimed in claim 1 wherein the Service provider includes any one or
5 more of: an Internet associated company or firm, a database management network or service, an organisation or a vendor.
9. A method as claimed in claim 1 wherein the database includes one or more data
10 containing or storing systems or software or hardware allowing product or product reference details to be accessible via the Information Network or service provider network.
10. A method as claimed in claim 1 wherein the identity of a product includes one or
15 more of: the product name, product type, product category and the product nature.
11. A method as claimed in claim 1 wherein the the location of a product includes one
or more of: the physical location, the storage location, the commercial or business
location, the reference date location and a hypertext link
- 20 12. A method as claimed in claim 1 wherein the price of a product includes one or

more of: the actual price, the retail price, the estimated price or a price range defined as one or more values between an upper and a lower price limit

13. A method as claimed in claim 1 wherein the response data includes details of one
5 or more products registered in the database or the availability thereof.
14. A Search Engine for generating response data with regard to a product required by a user, the search engine including a method for generating and processing a user request from a remote base, said user request relating to a product on an
10 information network and said information network including a computer network of a service provider with at least one database with available products, the method including the steps of:
- generating a first data input request relating to the identity of a product requested;
 - 15 - generating a second data input request relating to the location of a product requested;
 - generating a third data input request relating to the price of a product requested;
 - processing the first, second and third data input request on a computer;
 - 20 - processing the first, second and third data input request on a computer

- network of a service provider and comparing the product request data-sets in relation to available products registered in at least one database;
- generating at least one response data or message including the results of the search with detail of the products associated database; and
 - 5 - communicating the response data or message to the user in response to the request.
15. A method as claimed in claim 14 wherein the search engine includes a browser based software application with encryption and decryption capabilities and
- 10 communication means to compile user request information and forward them to a computer network of a service provider.
16. A method of programming a computer it means steps of:
- providing a programable computer;
 - 15 - storing a predetermined computer program on the storage capability of the computer , the program being capable of causing a body of data to be inspected for data comprises a set of pre-selected variables;
 - causing a pre-selection set of variables to be entered into the computer and received by the computer program;
 - 20 - causing the pre-selected variables to be processed by the pre-programed computer

relative to the database for matching variable; and

- causing the computer to display matched variables identified in the database

- 5 17. A method as claimed in claim 16 in which the computer is interconnected to at least one other computer comprising at least one database to be inspected, the combination being such that the pre-selected variable can be entered at the first computer, the program processing such information and accessing the database at the other or second computer, and the matched data returned to the first computer
10 , for display purposes.
18. A method as claimed in any one of the preceding claims in which the first computer is interconnected to a network of computers.
- 15 19. A method as claimed in any of the preceding claims in which the variables comprises a first variable relating to an identity of a predetermined product; a second variable relating to a location of a predetermined product and a third variable relating to a monetary value of such predetermined product.
- 20 20. A method as claimed in any of the preceding claims in which the computer

program includes encryption and decryption capabilities adapted to process information transmitted to a network encrypted form and to decrypt such information for display purposes.

5 21. A computer program as claimed in one of the preceding claims comprising a capability to interactively manage information process thereby thought the functioning of the computer associated therewith.

22. A system for searching for a product electronically the system comprising:

- 10 – an electronic network including at least one data terminal at a user base, at least one computer network of a service provider and at least one database including details of available products.
- 15 – means for generating on the system a first data input request relating to the identity of a product requested, generating a second data input request relating to the location of a product requested and generating a third data input request relating to the price of a product requested;
- 20 – processing means for processing the first, second and third data input request on a computer network of a service provider and comparing the product request data-sets in relation to available products registered in at least one database;

- means for generating at least one response data or message including the results of the search with detail of the products associated database; and
- system software for communicating request and response data or message to and from the user in response to the request or response message.

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23. A Search Engine for generating response data with regard to a product required by a user, the search engine including a system for generating and processing a user request from a remote base, said user request relating to a product on an information network and said information network including a computer network of a service provider with at least one database with available products, the system comprising:

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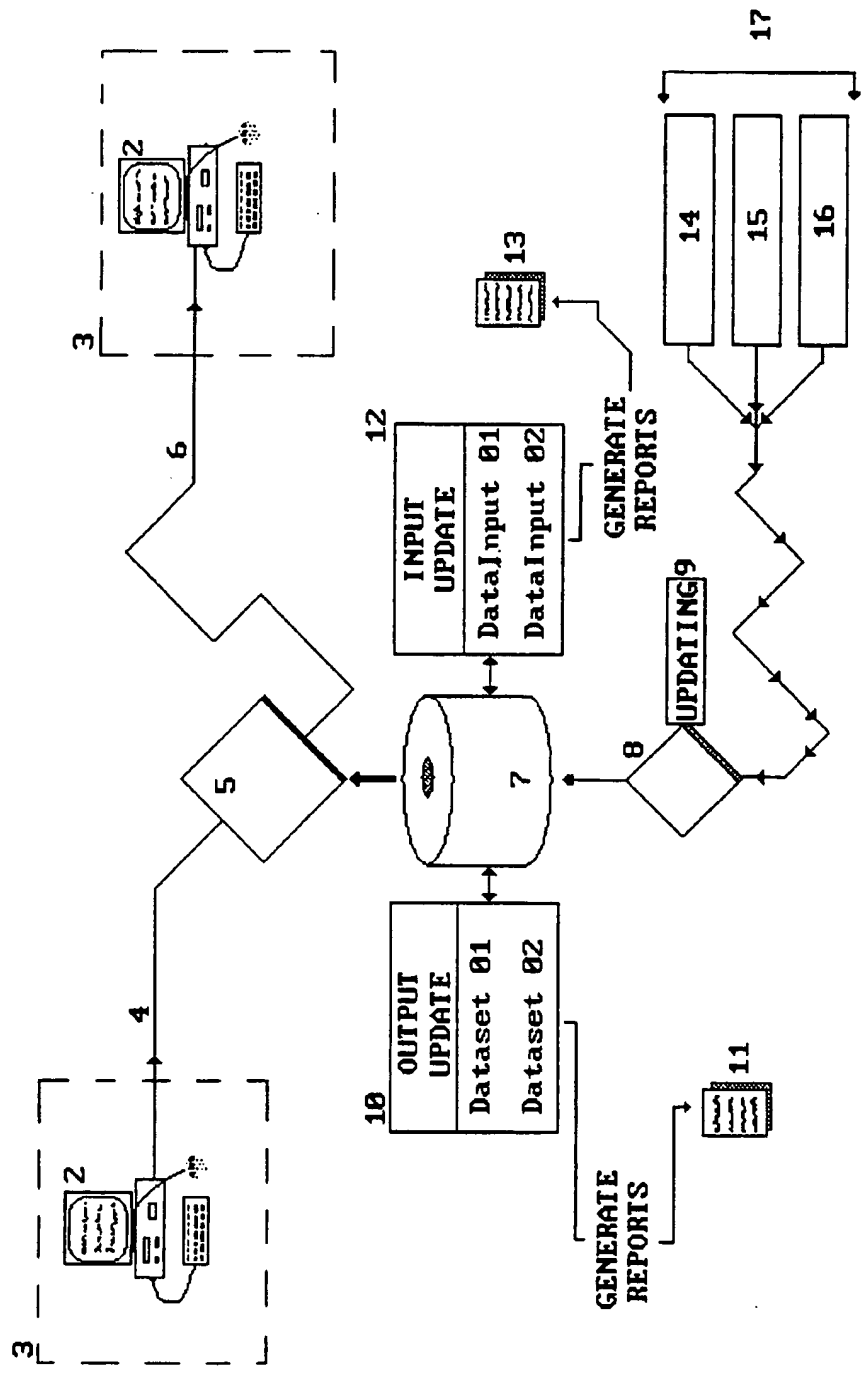
- a computer network with at least one database and a user data terminal;
- means for generating a first data input request relating to the identity of a product requested;
- 15 - means for generating a second data input request relating to the location of a product requested;
- means for generating a third data input request relating to the price of a product requested;
- means for processing the first, second and third data input request on a
- 20 computer network of a service provider and comparing the product request

data-sets in relation to available products registered in at least one database;

- means for generating at least one response data or message including the results of the search with detail of the products associated database; and
- system software for communicating request and response data or message

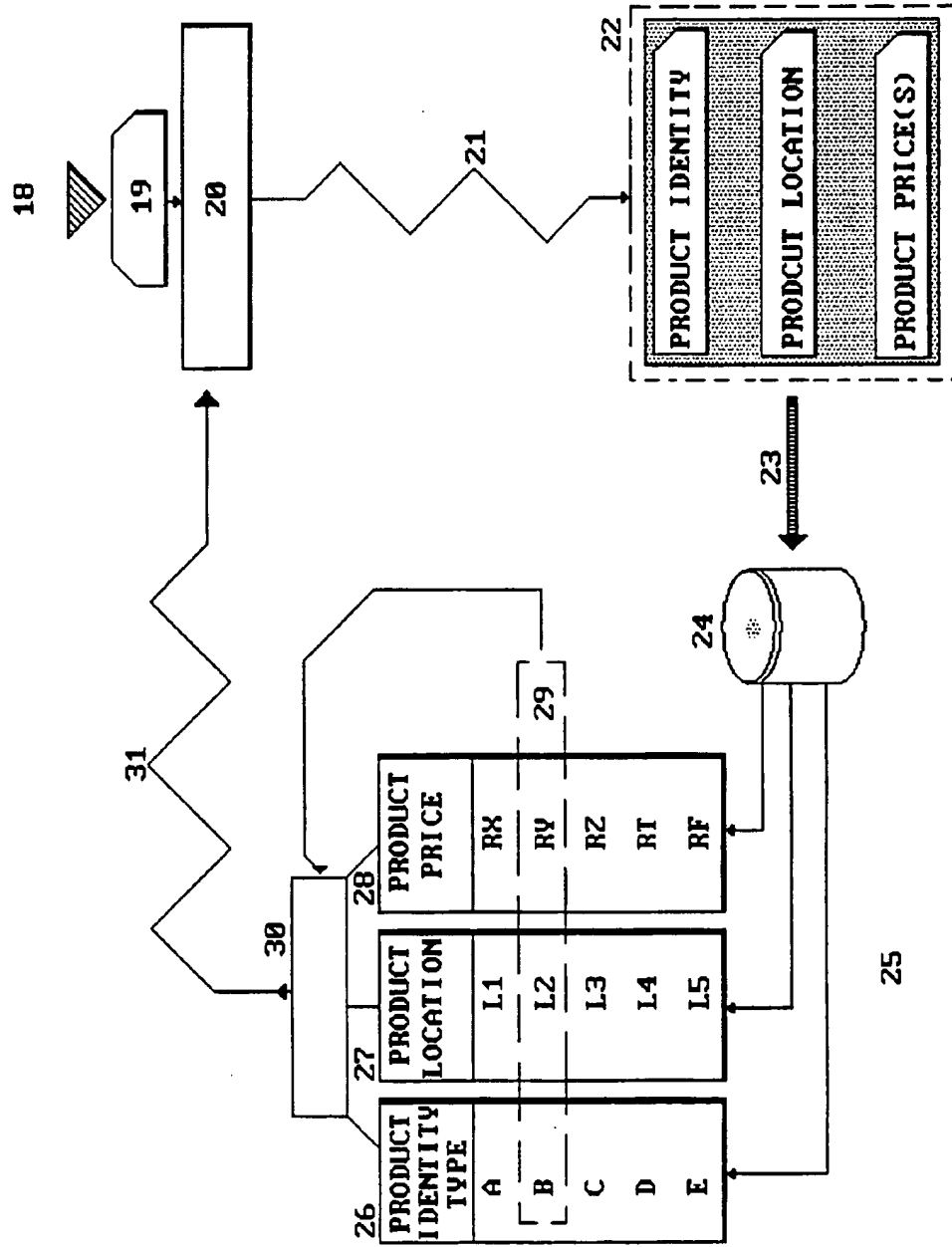
5 to and from the user in response to the request or response message.

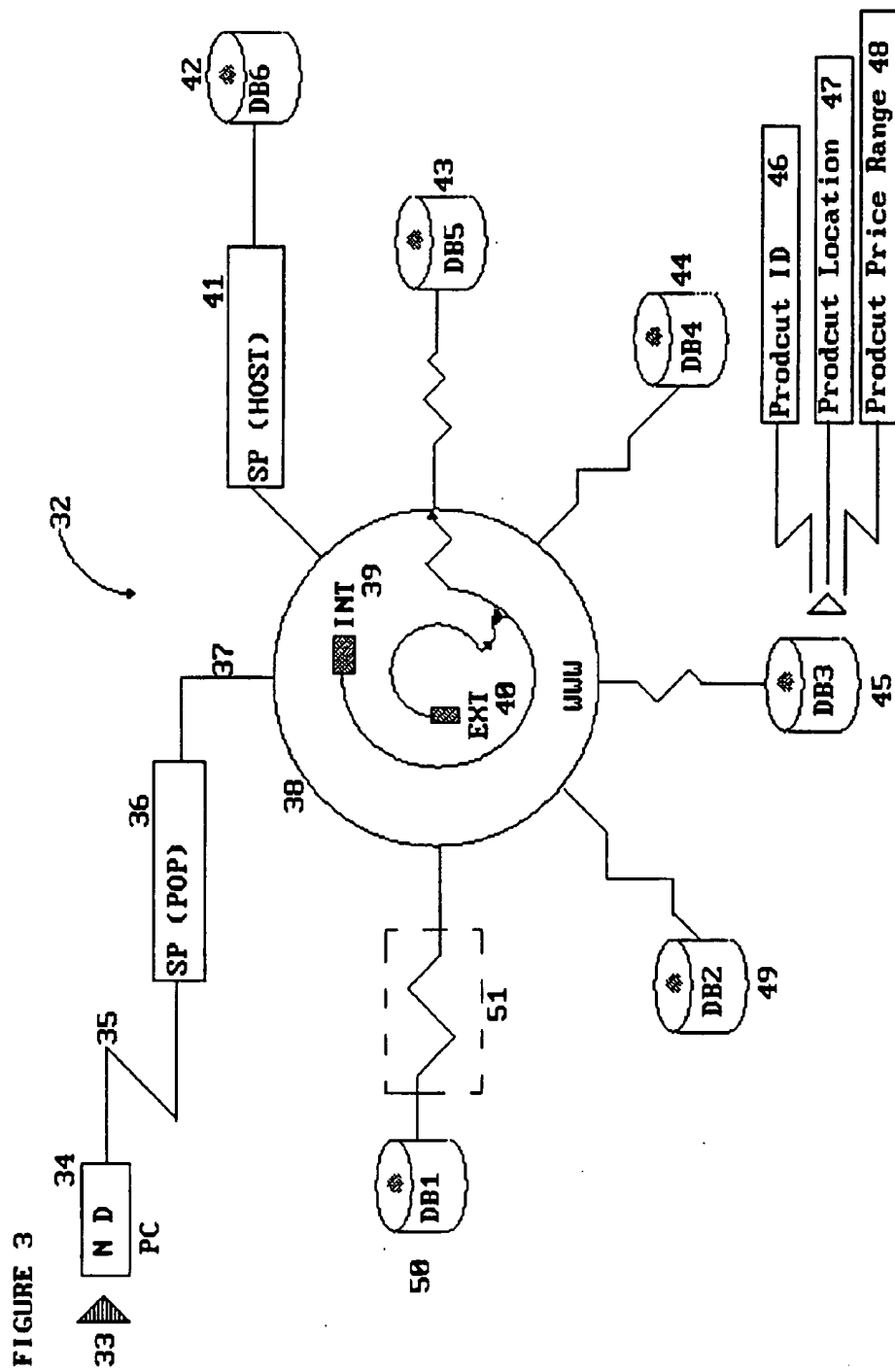
FIGURE 1



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FIGURE 2





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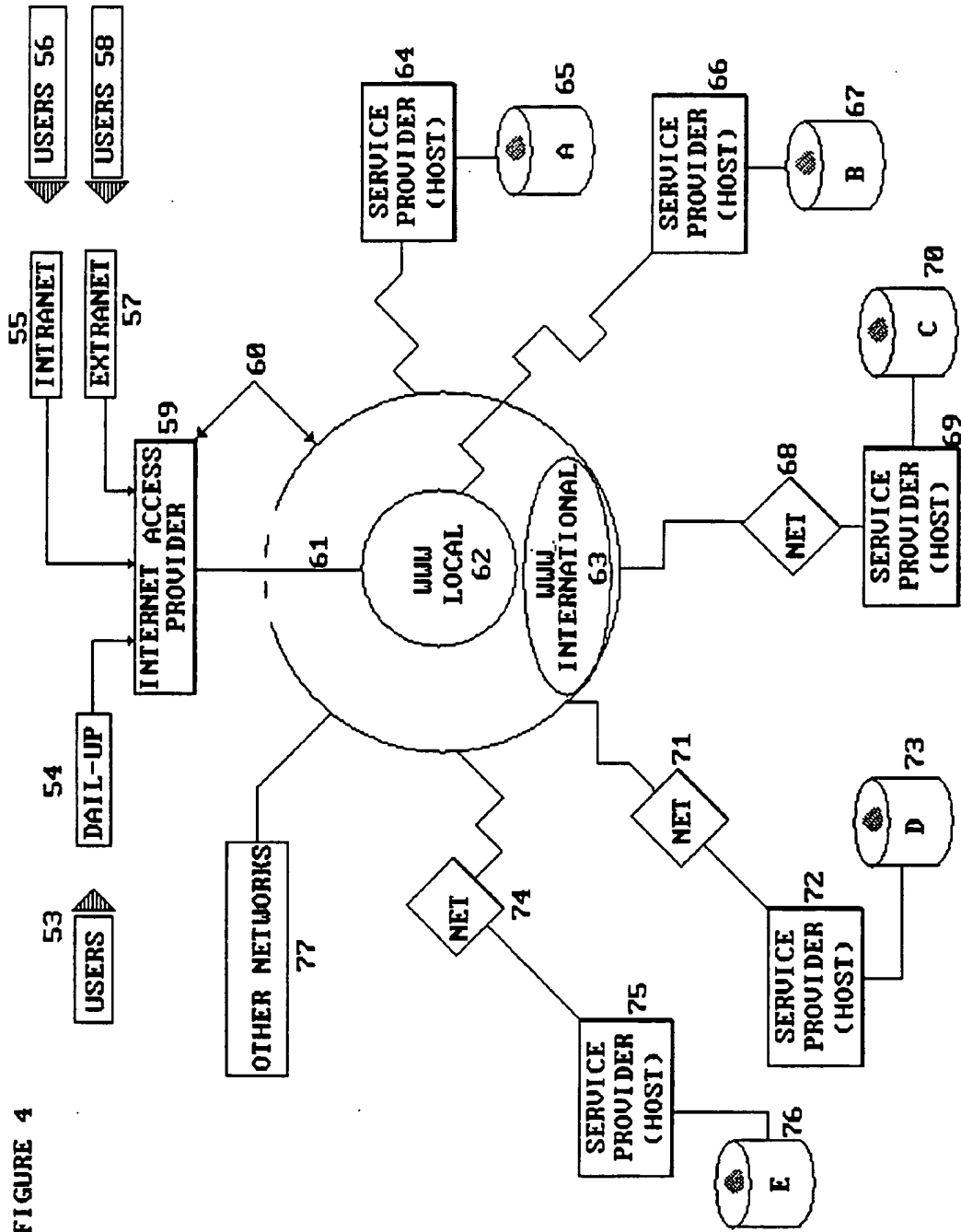


FIGURE 4

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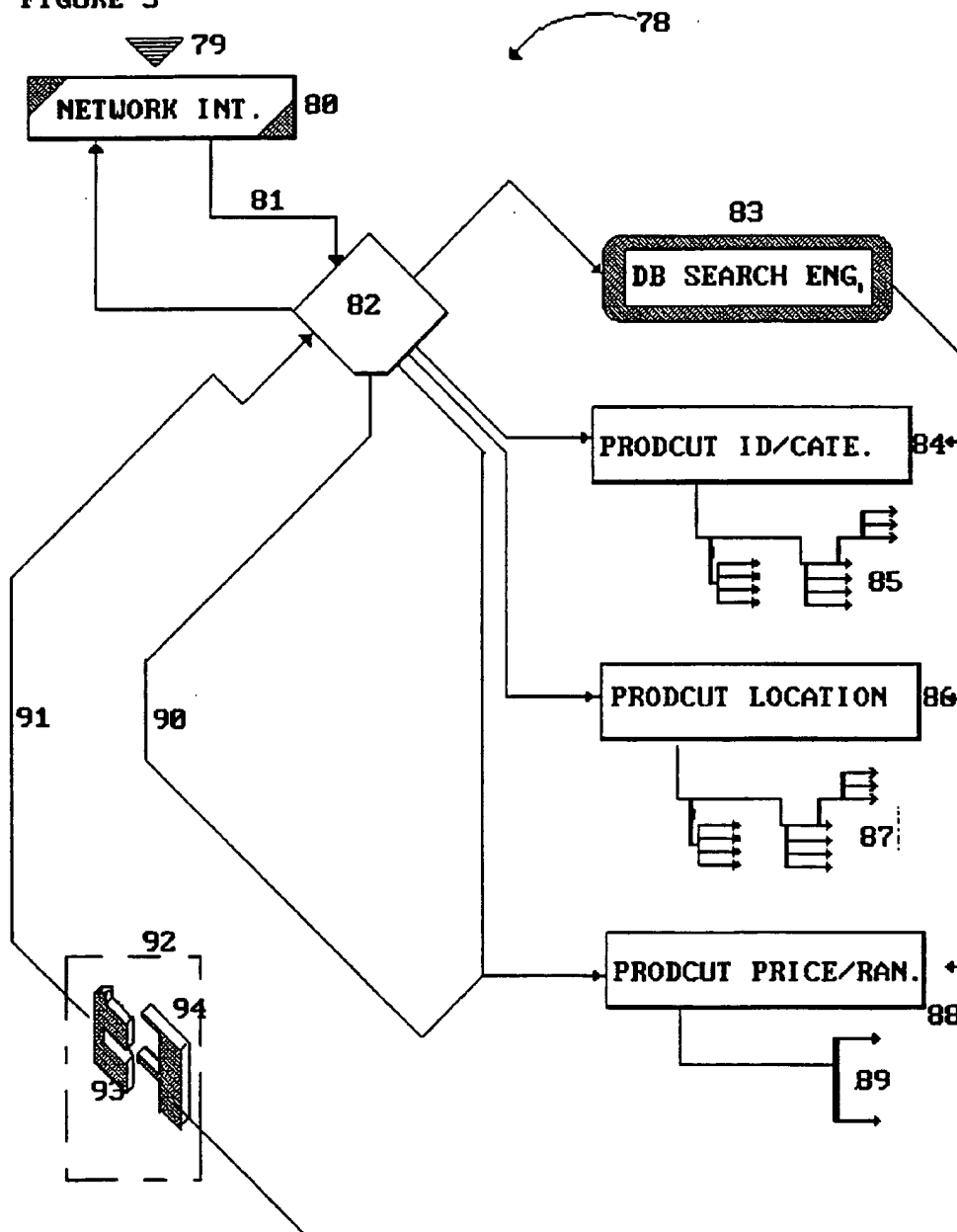
FIGURE 5

FIGURE 6

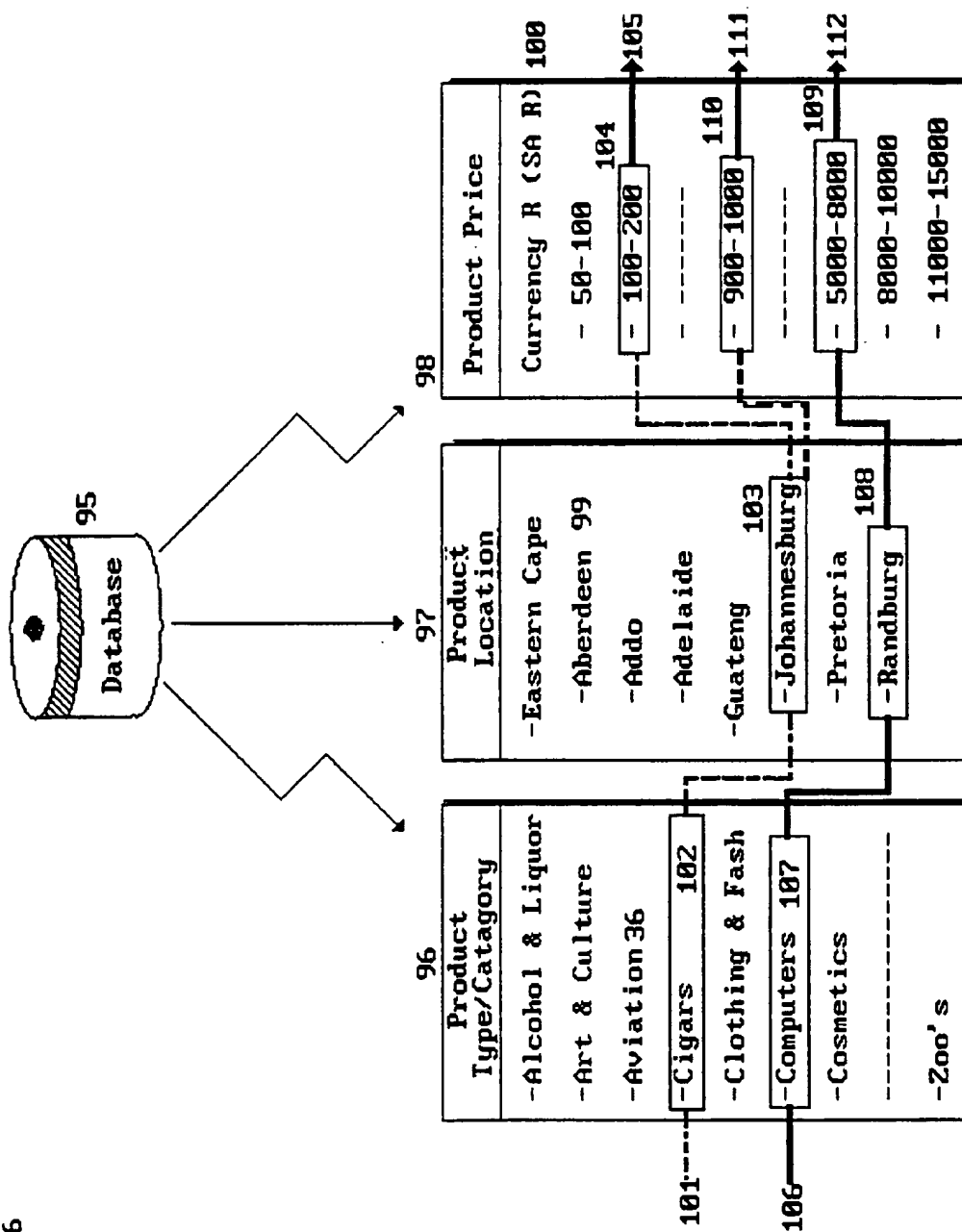
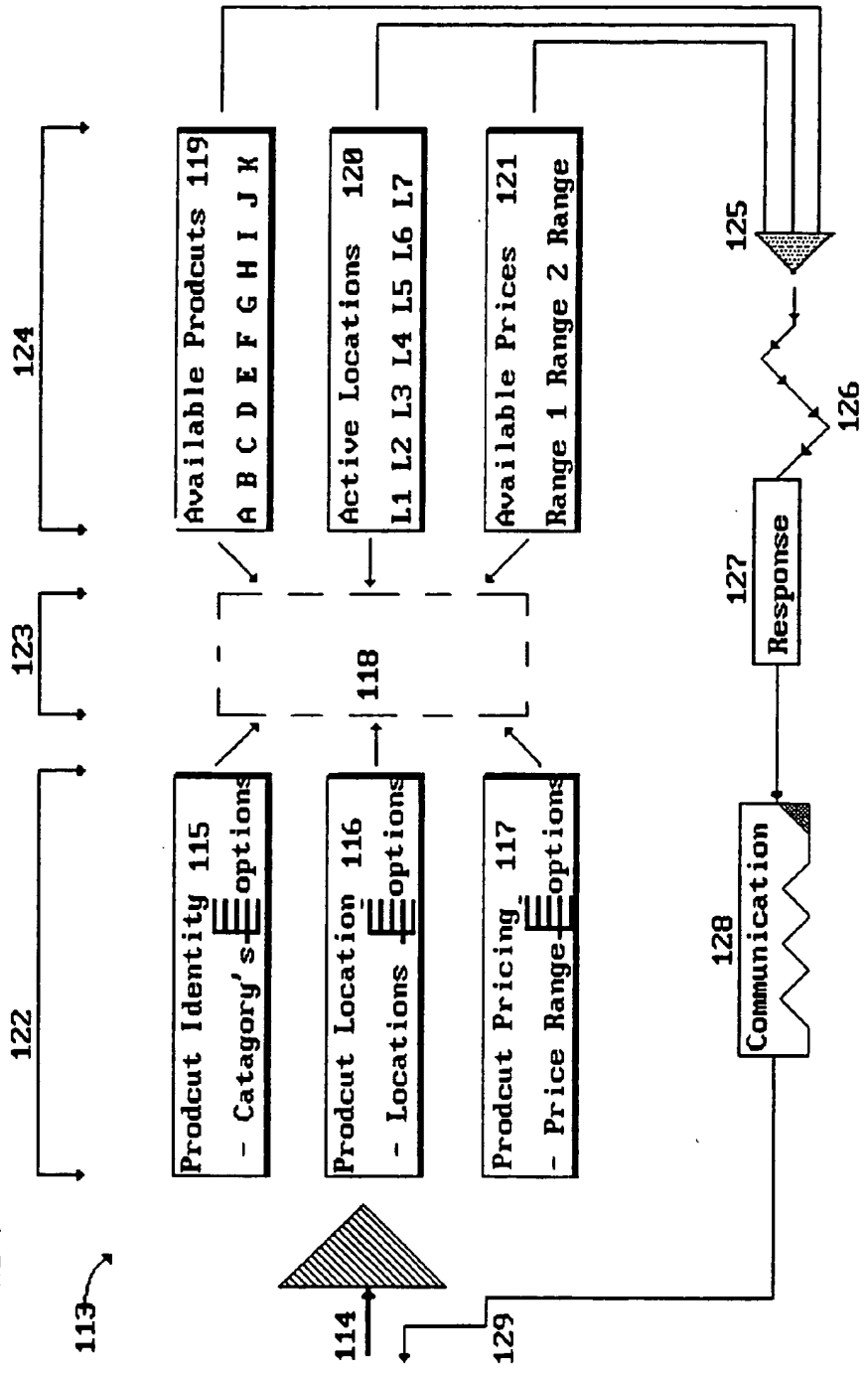


FIGURE 7



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FIGURE 8

130

131 OPTIONS		DATABASE ENTRIES		132		CONTACT/REFERENCE INFO			133		134		
		PRODUCT		LOCATION PRICE				TEL		FAX ADDRESS		WWW ADDRESS	
135	[	WINE	E-CAPE	R5-R10	142	[	32332	3444	PAARLHOUSE	146	[	WINE&PAARL.CO.;
		WINE	JHB	R5-10			35994	4992	WINEHOUSE			WINEHOUSE.NET	
136		BMW	DUR	R 50000	144	[	23488	9900	AUTOLAND	139	[	AUTO@PIX
137		MERC	CTN	R 50000			99889	9999	MERCLAND			MERC@AUTO.NET	
138	[	PC	JBN	R 5000	143	[	99893	1223	PCLAND	MECER.CO.ZA	[
		PC	PTN	R 5000			01233	9998	MECER				
140	[	PRINTER	PTN	R 1200	145	[	98998	8899	HP-MARI	146	[
		PRINTER	PTN	R 1300			23212	3232	PRINTERHOUSE				
141		TYRES	CIN	R 450			2321	1222	TIGER W&T				

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FIGURE 9

